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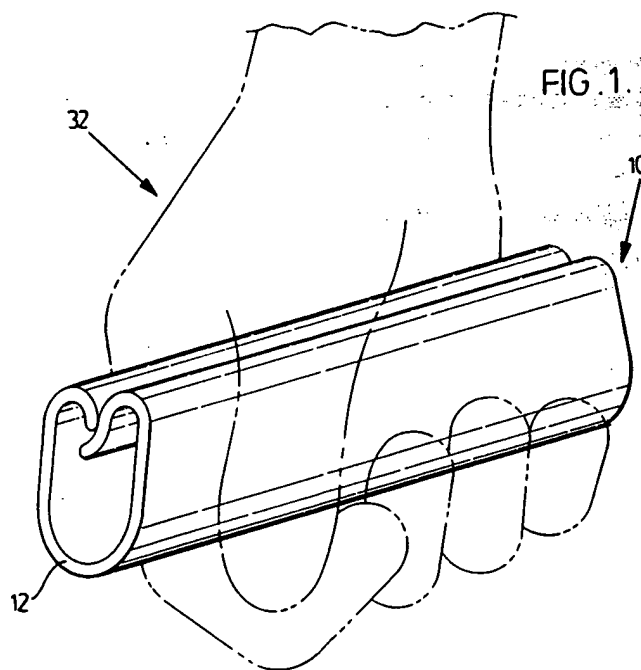
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(58) Field of search

A4G

(54) Detachable handgrip for carrying items

(57) A handgrip 10 comprises a plastic elongate tubular body portion having a curved base 12, opposing sidewalls and a separable top to permit opening of the handgrip by virtue of the sidewalls flexing relative to the base. The top has an overturned portion integral with each sidewall and extending into the tubular portion. The overturned portions oppose one another to define the entrance area to within the tubular body portion. The plastics material is sufficiently flexible to permit flexing of the sidewalls and also sufficiently resilient to bias the overturned portions towards one another to at least partly reclose the open top once an item has been inserted within the tubular body portion. The overturned portions may latch one over the other.



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SPECIFICATION

Detachable handgrip for carrying items

- 5 This invention relates to handgrips and particularly those which may be opened to permit placement of items to be grasped within the grip portion.

Various types of handgrips have been developed in the past for carrying parcels and the like which may have rope handles. Examples of such carrier handles or holders for shopping bags are disclosed in U.S.A. - 2,041,691 and U.S.A. - 4,004,722. In Becklin, U.S.A. - 2,041,691, a hardwood carrier handle is shown which has two grooves cut therein to receive the pair of rope handles on a shopping bag. This facilitates carrying of the bag by reason of the hardwood handle preventing the narrow rope cutting into user's hand.

Olivier, U.S.A. - 4,004,722, also discloses a handle device which may be used in clipping onto ropes to carry parcels. The clip portion on the handle which receives the rope is separate from the portion one grasps to carry the parcel. If the parcel is too heavy, the clip portion can readily open and result in dropping of the parcel. A suggested modification to the handle arrangement to provide for carrying heavier parcels is to grip the handle beneath the clip portion which receives the rope. This results in the regular handle portion interfering with the user carrying the heavy parcel so that the handle is not readily usable in this manner. In addition, the handle arrangement cannot be readily placed over edges of items to be carried, such as panels and box openings, because of the handle interfering with such positioning.

The tubular handgrip, according to this invention, permits one to use it in association with a variety of items to be carried, namely, bags with handles, ropes for towing or pulling items, ropes for binding articles, edges of items such as plywood sheet and edges of open-sided handholds or raised handles in cardboard cartons for bottles and the like.

The separable tubular handgrip, according to an aspect of this invention, aids the hand gripping of items. The handgrip is formed of a flexible plastics material and comprises an elongate tubular body portion having a curved base which is straight along its length, opposing sidewalls and a separable top to permit opening of the handgrip by virtue of the sidewalls flexing relative to the base. The top has an overturned portion integral with each sidewall and extends into the tubular portion. The overturned portions oppose one another to define the entrance area to within the tubular body portion. The interior surface of the base portion is free of any projections into the cavity within the tubular portion. The plastics material is sufficiently flexible to permit the flexing of the sidewalls and sufficiently resilient to bias the overturned portions towards one another.

60 This device aids the manual grasping of items by wrapping a user's hand about the curved base of the handgrip.

Preferred embodiments of the invention are shown in the drawings wherein:

65 *Figure 1* is perspective view showing the handgrip

held in a user's hand;

Figure 2 is a side view of the handgrip of *Figure 1*;

Figure 3 is a top view of the handgrip of *Figure 1*;

Figure 4 is a section of the handgrip of *Figure 1*;

70 *Figure 5* shows the use of a handgrip of *Figure 1* in capturing a plurality of handle portions on plastic bags for purposes of carrying the bags;

Figure 6 shows the use of the handgrip for insertion in the open-sided handholds of boxes

75 which contain glass articles and the like;

Figure 7 shows the use of the hand carrier with a tow rope or the like;

Figure 8 shows the handgrip of *Figure 7* in the latched position to retain positively the rope within the handgrip;

80 *Figures 9 and 10* are sections through alternative embodiments of the handgrip; and

Figure 11 is a perspective view of the handgrip of *Figure 9* applied over an edge of plywood sheeting to facilitate carrying.

A long standing problem in carrying articles is that rope handles, rope for securing parcels closed and handles on small plastic shopping bags and the like cause great discomfort to the person carrying the items. The handles are usually very narrow causing a stress concentration on the user's hand which distorts the fingers and results in considerable pain and discomfort. The degree of discomfort is increased considerably with increased weight in the bags. The handgrip, according to this invention, overcomes these problems and is readily usable in carrying all types of items. Referring to *Figures 1* through 4, the handgrip 10 comprises a curved base portion 12 with sidewall portions 14 and 16 which, according to this embodiment, are planar opposing upright walls. The base portion 12 is straight along its length. The top portion 18 of the handgrip includes overturned portions 20 and 22. The overturned portions extend into the tubular handgrip 10 which has a cavity area 25. The interior surface of the base portion 12 is free of any projections into the cavity.

As shown in *Figure 2*, according to this embodiment, the ends of the handgrip slope downwardly at 24 and 26. The handgrip is made from a plastics material which is sufficiently flexible to allow opening of the top 18 by flexing the sidewalls 14 and 16 about the base 12. This separates the overturned portions 20 and 22 to permit insertion of an item to be carried, such as a rope, narrow handle portion or the like within the cavity 25. The plastics material may have sufficient resiliency to bias or urge the overturned portions 20 and 22 towards one another. As shown in *Figure 4*, the resiliency of the plastic is sufficient to contact the overturned portions at area 28 to define an entrance area 30 which extends along the length of the handgrip as shown in *Figure 3*. Once an item to be carried is placed within the handgrip 10, as shown in *Figure 1*, a user's hand generally designated 32 grips the handgrip by wrapping the user's hand about the base 12 of the handgrip 10. According to this embodiment, due to the upright sidewalls 14 and 16 and the width of the base 12, the handgrip is of sufficient size and the base is curved that considerable weight may be

carried in the handgrip without causing discomfort to the person's hand because the grip fits nicely within the folded finger region.

- As can be appreciated, this type of hand carrier 5 has many uses. Ropes of handle portions for shopping bags and ropes for holding boxes together may be inserted in the handgrip. The handgrip may also be used in grasping toboggan ropes and other ropes for towing items and starter cords. An important 10 feature of the handgrip is for use in association with plastic carrying or shopping bags as shown in Figure 5. Sections of the plastic bag handles, namely six sections thereof, show a common type of plastic shopping bag. Each bag has a side portion 34 which 15 has punched therein a handle opening 36. The openings may be of various configurations, such as, round, oval or rectangular. Normally, one carries the bag by gripping the upper portion 38 of each bag side. With the handgrip 10 of this invention, several 20 bag handles may be inserted in the handgrip 10 through the entrance 30 of the handgrip. The openings are appropriately stretched from their normal configuration, if needed, to accommodate the handgrip 10. As an example, six bag handles are 25 inserted in the handgrip 10. It is appreciated that the handgrip 10 can be used with more or less than three bags.

- The resiliency of the handgrip plastic is sufficient to reclose the entrance portion in the manner shown. 30 Thus one is able to insert his hand through the bag openings 38, grasp the handgrip 10 and safely carry the bags with the handgrip held closed so that none of the bags can slip from the handgrip and result in damage to the carried goods. Due to the resiliency of 35 the handgrip plastic selected for this embodiment of the invention, the handgrip is maintained in the closed position when not held in the hand, so that when the bags are set down, the bag handles are retained in the handgrip. The plurality of bags in the 40 handgrip are ready to be picked up again when needed. The ends of the handgrip are sloped at 24 and 26 to allow the ends to bend slightly. This prevents the grip biting into or straining the corner portions 40 and 42 of the bag being carried. By the 45 handgrip distributing the load of the bags along the handle portions 38, this ensures that the handles of the bags are not ripped by piercing these corner areas of the bag handles.

- Another use for the handgrip 10 is for insertion in 50 open handholds 44 in the side of a cardboard box 46 or the like. There are, for example, many forms of cardboard boxes which have openings 44 in each end to provide handholds for carrying heavy glass articles and the like. Because the opening 44 is of 55 limited width, again in prolonged carrying of the cardboard carton 46, great discomfort can be realized by the user. By spreading apart and opening the top portion 18 of the handgrip and sliding it over the upper region 48 of the opening 44 in the box 46, a 60 broad handgrip portion by way of the base 12 is provided to allow the user to comfortably carry heavy boxes and the like. The overturned portions 20 and 22 allow easy slipping of the handgrip into position by reason of their smoothly rounded 65 portions camming against the apertured sidewalls of

the box and being forced into position as shown in Figure 6. Similarly, the handgrip 10 may be used with cardboard handles on the top of the boxes. The handgrip is inserted over the cardboard handlegrip region.

- 70 Considering the use of the handgrip 10 with rope 50, the rope is inserted into the handgrip through the entrance region 30 by spreading the sidewalls apart in the manner already discussed. By grasping the 75 grip 10 about its base portion 12, minimal discomfort is realized by the user in having significantly increased the surface area to grip and apply load to the rope 50. There may be situations when it is desired to positively retain the rope 50 in the hand carrier 10. 80 This is shown in Figure 8 where overturned portion 22 has a curved area 52 which underlies the edge 54 of the other overturned portion 20. By pressing the sides 14 and 16 towards one another, the overturned portion 20 is snapped upwardly over the underlying 85 portion 22 by camming engagement with the surface 56. Referring to Figure 4, overturned portion 20 includes an interior recess 58 and overturned portion 22 includes a rounded exterior surface 60. By 90 snapping the portions together, the rounded interior portion 58 snaps over the corresponding rounded portion 60 to provide a latching closed of the handgrip 10.

- An alternative embodiment is shown in Figure 9, where the handgrip 10 has a base portion 12 with 95 opposing sidewalls 14 and 16. The overturned portions are slightly different in that they comprise smoothly rounded portions 62 and 64 which have depending planar parallel portions 66 and 68. The opposing faces of portions 66 and 68 have ribs 70 100 which abut one another due to the inherent resiliency of the plastic biasing portions 66 and 68 against one another and in so doing, defining an entrance area 72. The ridges or ribs 70 are useful when it is desired to grip a bag without a handle. The bag 105 upper portion may be inserted into the cavity 74 within the tubular handgrip 10 where the ridges 70 grip the upper bag portion. Then by rolling the handgrip 10 into the bag upper portion, a secure grip is provided to carry the bag contents.

- 110 Another use for the handgrip 10 of Figure 9 is in having the serrations 70 is for gripping panel edges and the like for purposes of carrying. Referring to Figure 11, a plywood panel 80 is shown partly in section with the handgrip 10 of Figure 9 placed over 115 the edge 82 of the plywood panel. The sidewalls 14 and 16 are separated to open the entrance area 72 so as to place the opposing portions 66 and 68 on respective sides 84 and 86 of the plywood panel. The 120 ridges 70 grip the panel edges to resist the grip popping off of the panel during use and slipping along the panel. In so using the handgrip 10, one may easily grasp a large sheet of plywood and comfortably carry it with a pair of handgrips. This avoids discomfort to the carrier and reduces the risk 125 of getting wounded slips in one's hands. Similarly, the handgrips may be used in carrying glass sheet and the like to again reduce discomfort and prevent one cutting his hands on the glass edges.

- In figure 10, an alternative embodiment for the 130 handgrip is shown. The handgrip 10 has the normal

vision of a base portion 12 with upstanding sidewalls 14 and 16. The sidewalls have overturned portions 88 and 90 which are rounded to define the entrance area 92. The overturned portions are smoothly curved to provide rounded opposing portions 94 and 96. Such section for the handgrip lends itself readily to formation by extrusion or injection molding.

It is appreciated that the handgrip 10 may be formed by injection molding the shape from an appropriate plastic material. Alternately the shape may be cut from an extruded length of the tubular body portion of an appropriate plastics material. As can be appreciated by those skilled in the art, many plastics are available which would be useful in forming the handgrip. These include polyethylene, high density polyethylene, and less flexible plastics such as polypropylene and polyurathane. Obviously the plastic has to have sufficient flexibility to provide for opening of the grip for use. With respect to the needed resiliency in the plastic, it is desirable for the plastic to have sufficient memory to urge or bias the overturned portions of the handgrip towards one another. Depending upon the use, such as in carrying grocery bags, it is desirable that the plastic have sufficient memory to urge the opposing portions together so as to close the entrance to the handgrip and prevent the bag handles from falling out of the handgrip when the carried bags are set down. However, it is appreciated that such memory in the plastics material need not always close the handgrip, because the overturned portions can function as hooks to preclude the bag handles slipping out of the handgrip should the bags, when set down, exert an opening force of the handgrip. The overturned portions would hook the handles and ensure that they do not fall out of the handgrip. Other considerations in selecting the desired resiliency for the plastic is that the handgrip may be formed with catch portions which function in the manner discussed with respect to Figure 8, thereby positively retaining the items within the handgrip. In addition, the handgrip, when formed, may be slightly open at the top entrance portion to facilitate insertion of items within the handgrip cavity.

CLAIMS

1. A separable tubular handgrip for aiding the handgripping of items, said handgrip being formed of a flexible plastic material and comprising an elongate tubular portion having a curved base which is straight along its length, opposing sidewalls and a separable top to permit opening of the handgrip by virtue of the sidewalls flexing outwardly away from one another relative to the base, characterized in that said top having an overturned portion integral with each sidewall and extending into a cavity into said tubular portion, said overturned portions opposing one another to define the entrance area to within said tubular body portion, said curved base having a correspondingly curved interior surface which is straight along its length and is free of any projections into said tubular portion cavity, said plastics material being sufficiently flexible to permit said

flexing of the sidewalls and sufficiently resilient to bias said overturned portions towards one another, thereby aiding the manual grasping of such item by wrapping a user's hand about said curved base of the handgrip.

2. A handgrip of claim 1, characterized in that said overturned portions are planar.

3. A handgrip of claim 1 or 2, characterized in that said overturned portions have on their opposing surfaces a plurality of ribs.

4. A handgrip of claim 1, characterized in that said first underlying overturned portion is curved to guide said second overturned portion over the top portion integral with said first overturned portion to latch closed the handgrip, such latching arrangement facilitating the use of said handgrip with ropes and the like.

5. A handgrip according to anyone of the preceding claims, characterized in that said tubular portion has each end portion sloping downwardly towards the base.

6. A handgrip according to anyone of the preceding claims, further characterized in being formed by injection molding of polyethylene.

7. A handgrip according to anyone of the preceding claims, further characterized in being formed by cutting such tubular body portion from an extruded section of polyethylene.

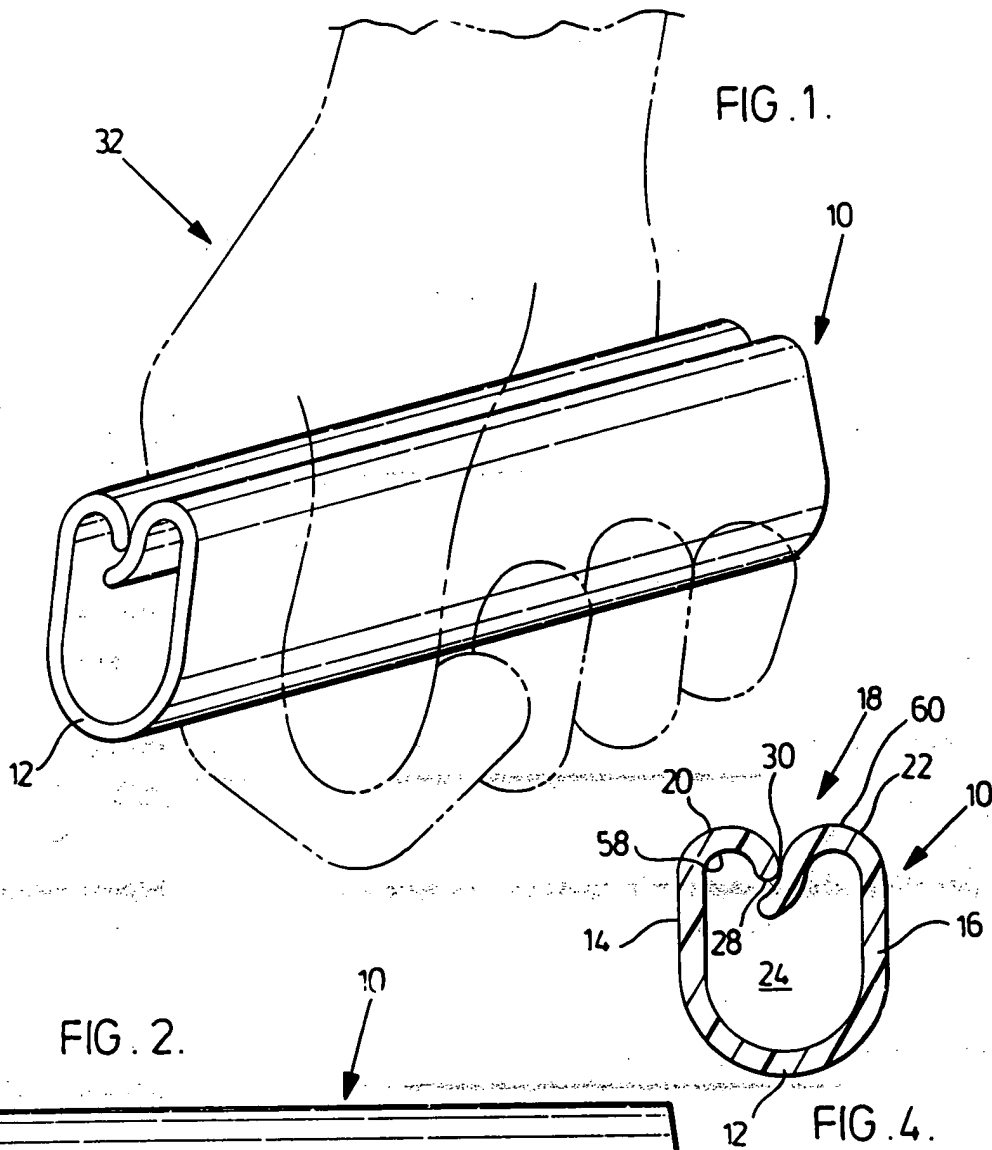
8. A handgrip according to anyone of the preceding claims, characterized in that said sidewalls are planar and extend upwardly from said curved base to define said cavity within the tubular body portion of sufficient size to receive several handle portions of a plurality of plastic bags.

9. A handgrip according to anyone of the preceding claims, characterized in that said overturned portions are smoothly rounded along said entrance area to facilitate insertion of item portions into the hollow portion.

10. A handgrip according to anyone of the preceding claims, characterized in that said plastics material has sufficient resiliency to bias said overturned portions against one another.

11. A separable tubular handgrip for aiding the handgripping of items constructed, arranged and adapted to operate substantially as herein described with reference to Figures 1 to 8, Figures 9 and 11 and Figure 10 of the accompanying drawings.

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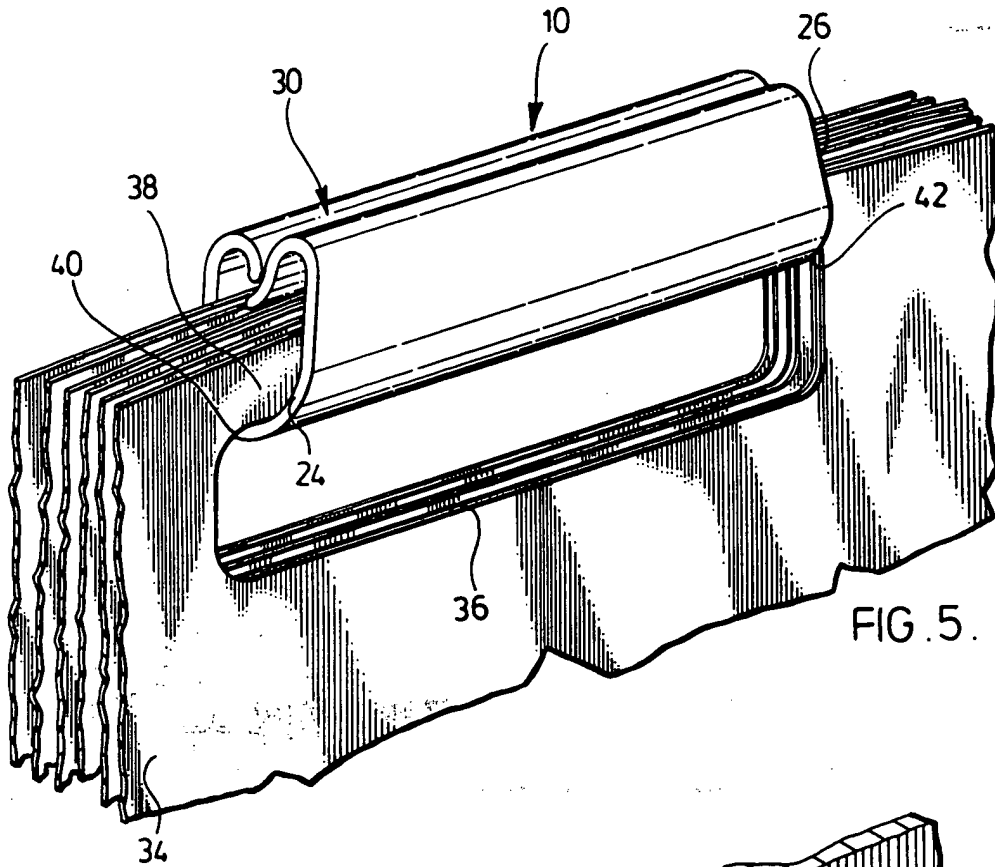


FIG. 5.

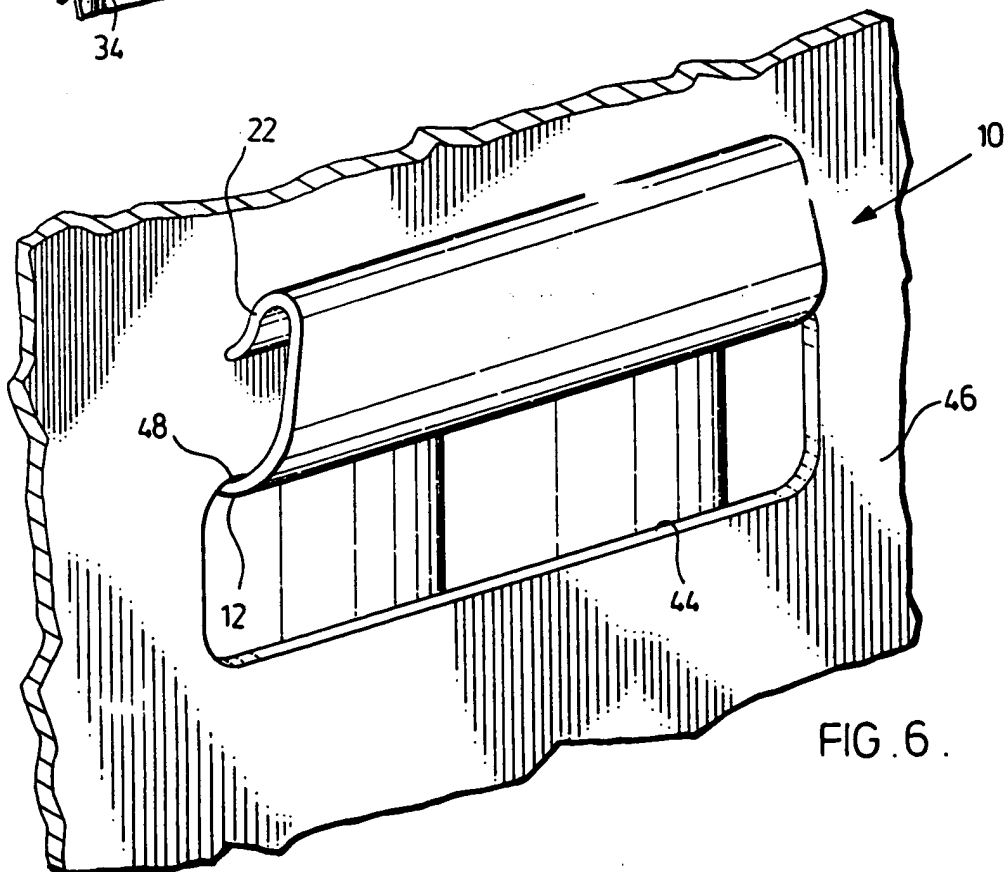


FIG. 6.

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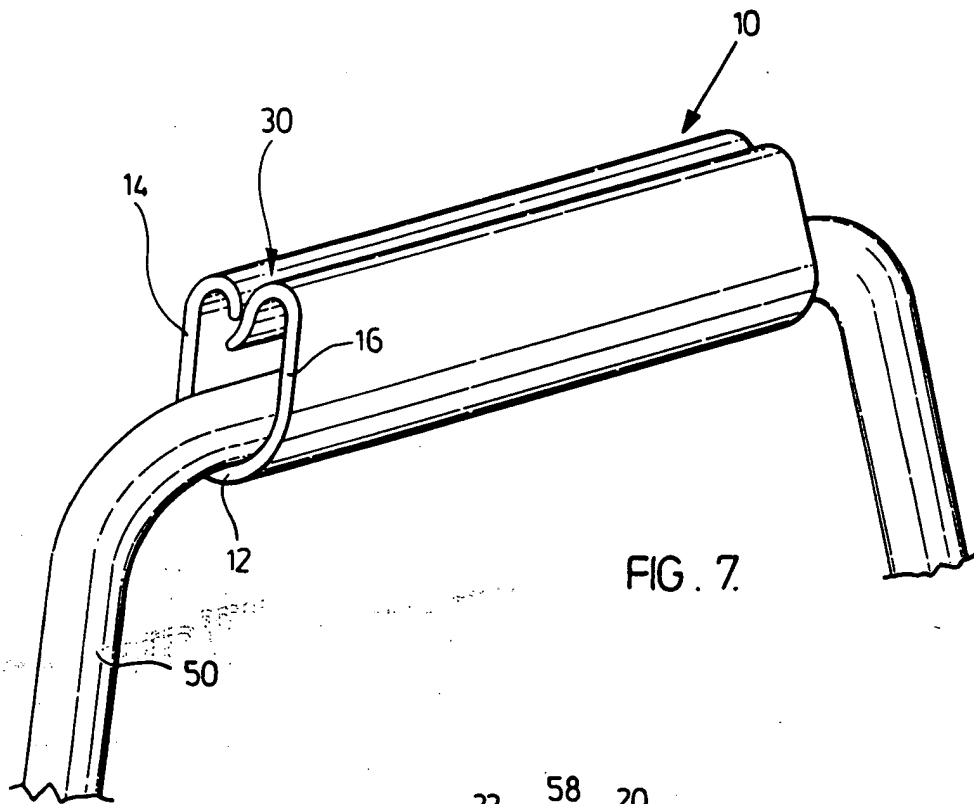


FIG. 7.

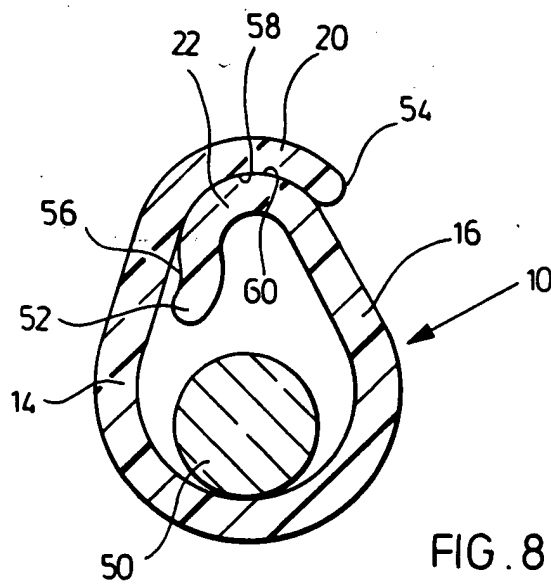


FIG. 8.

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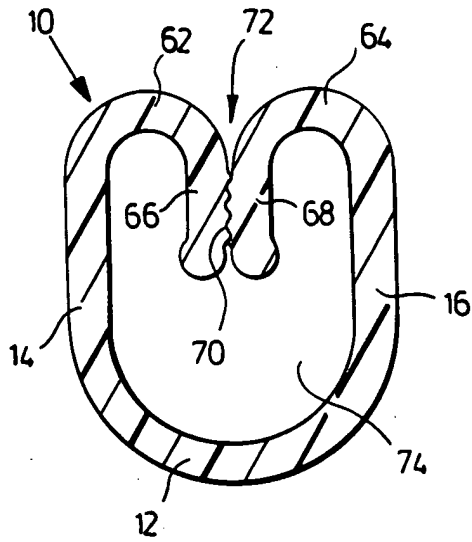


FIG. 9.

FIG. 11.

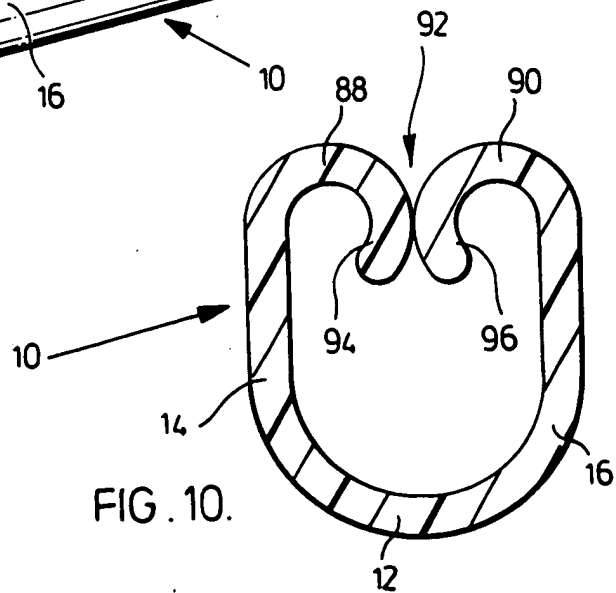
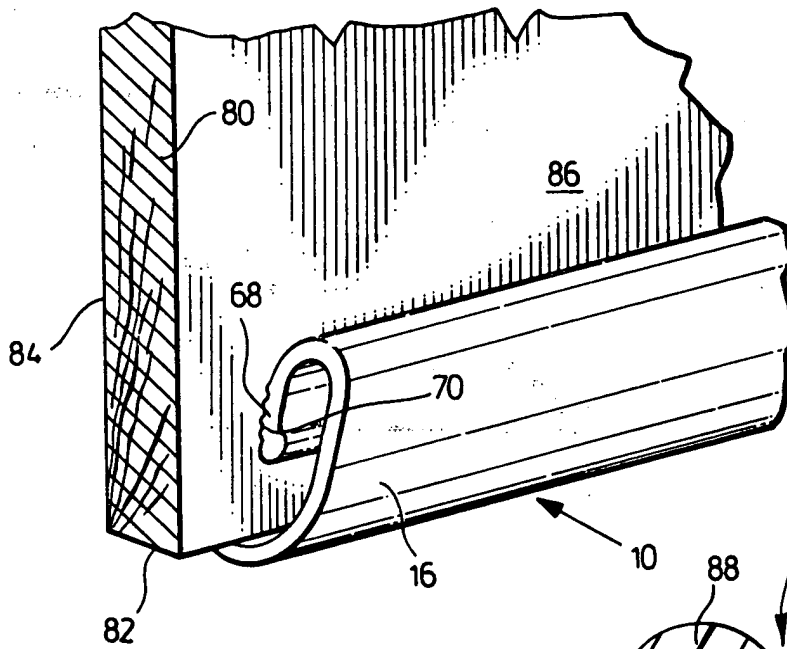


FIG. 10.

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